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S1 8 ZIPA OR ZIP(WA)

17/1 DIALOG(R)File 155: MEDLINE(R) (c) format only 1999 Dialog Corporation. All rts. reserv.

09921324 99157577
Localization of FtsL to the *Escherichia coli* septal ring.

Ghigo JM, Weiss DS, Chen JC, Yarrow JC, Beckwith J
Unite de Physiologie Cellulaire Institut Pasteur (CNRS URA 1300), Paris, France. jmgigho@pasteur.fr

Mol Microbiol (ENGLAND) Jan 1999, 31 (2) p725-37, ISSN 0950-382X Journal Code: M0M Contract/Grant No.: GM 38922, GM, NIGMS Languages: ENGLISH Document type: JOURNAL ARTICLE

In *Escherichia coli*, nine gene products are known to be essential for assembly of the division septum. One of these, FtsL, is a bipartite membrane protein whose precise function is not understood. Here we use fluorescence microscopy to study the subcellular localization of FtsL, both in a wild-type strain and in a *metabidiploid* strain that expresses a GFP-FtsL fusion protein. We show that FtsL localizes to the cell septum where it forms a ring analogous to the cytoplasmic FtsZ ring. FtsL localization is dependent upon the function of FtsZ, FtsA and FtsQ, but not FtsI. In a reverse approach, we use fusions of green fluorescent protein (GFP) to FtsZ, FtsA and ZipA to show that these proteins localize to the division site in an FtsL-independent fashion. We propose that FtsL is a relatively late recruit to the ring structure that mediates septation.

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09834021 99102215
Septal localization of FtsQ, an essential cell division protein in *Escherichia coli*.

Chen JC, Weiss DS, Ghigo JM, Beckwith J
Department of Microbiology and Molecular Genetics, Harvard Medical School, Boston, Massachusetts 02115, USA.

J Bacteriol (UNITED STATES) Jan 1999, 181 (2) p52-30, ISSN 0021-9193 Journal Code: HJ3 Contract/Grant No.: GM 38922, GM, NIGMS Languages: ENGLISH Document type: JOURNAL ARTICLE

Septation in *Escherichia coli* requires several gene products. One of these, FtsQ, is a simple bipartite membrane protein with a short cytoplasmic N terminus, a membrane-spanning segment, and a periplasmic domain. We have constructed a *metabidiploid* strain that expresses both FtsQ and the fusion protein green fluorescent protein (GFP)-FtsQ from single-copy chromosomal genes. The GFP-FtsQ gene complements a null mutation in ftsQ. Fluorescence microscopy revealed that GFP-FtsQ localizes to the division site. Replacing the cytoplasmic and transmembrane domains of FtsQ with alternative membrane anchors did not prevent the localization of the GFP fusion protein, while replacing the periplasmic domain did, suggesting that the periplasmic domain is necessary and sufficient for septal targeting. GFP-FtsQ localization to the septum depended on the cell division proteins FtsZ and FtsA, which are cytoplasmic, but not on FtsI and FtsL, which are bipartite membrane proteins with comparatively large periplasmic domains. In addition, the septal localization of ZipA apparently did not require functional FtsQ. Our results indicate that FtsQ is an intermediate recruit to the division site.

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09825598 99084954
Recruitment of ZipA to the septal ring of *Escherichia coli* is dependent on FtsZ and independent of FtsA.

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J Bacteriol (UNITED STATES) Jan 1999, 181 (1) p167-76, ISSN 0021-9193 Journal Code: HJ3 Contract/Grant No.: GM-57059, GM, NIGMS; GM-53276, GM, NIGMS Languages: ENGLISH

Document type: JOURNAL ARTICLE

Cell division in prokaryotes is mediated by the septal ring. In *Escherichia coli*, this organelle consists of several essential division proteins, including FtsZ, FtsA, and ZipA. To gain more insight into how the structure is assembled, we studied the interdependence of FtsZ, FtsA, and ZipA localization using both immunofluorescence and GFP tagging techniques. To this end, we constructed a set of strains allowing us to determine the cellular location of each of these three proteins in cells from which one of the other two had been specifically depleted. Our results show that ZipA fails to accumulate in a ring shape in the absence of FtsZ. Conversely, depletion of ZipA does not abolish formation of FtsZ rings but leads to a significant reduction in the number of rings per unit of cell mass. In addition, ZipA does not appear to require FtsA for assembly into the septal ring and vice versa. It is suggested that septal ring formation starts by assembly of the FtsZ ring, after which ZipA and FtsA join this structure in a mutually independent fashion through direct interactions with the FtsZ protein.

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09619104 98361917
Localization and function of early cell division proteins in filamentous *Escherichia coli* cells lacking phosphatidylethanolamine.

Milevskaya E, Sun Q, Margolin W, Dowhan W
Department of Biochemistry and Molecular Biology, University of Texas-Houston, Medical School, Houston, Texas 77225, USA.

J Bacteriol (UNITED STATES) Aug 1998, 180 (16) p4222-7, ISSN 0021-9193 Journal Code: HJ3 Contract/Grant No.: GM 20478, GM, NIGMS Languages: ENGLISH Document type: JOURNAL ARTICLE

Escherichia coli cells that contain the *psc*-93 null mutation are completely deficient in the major membrane phospholipid phosphatidylethanolamine (PE). Such cells are defective in cell division. To gain insight into how a phospholipid defect could block cytokinesis, we used fluorescence techniques on whole cells to investigate which step of the cell division cycle was affected. Several proteins essential for early steps in cytokinesis, such as FtsZ, ZipA, and FtsA, were able to localize as bands to potential division sites in *psc*-93 filaments, indicating that the generation and localization of potential division sites was not grossly affected by the absence of PE. However, there was no evidence of constriction at most of these potential division sites. FtsZ and green fluorescent protein (GFP) fusions to FtsZ and ZipA often formed spiral structures in these mutant filaments. This is the first report of spirals formed by wild-type FtsZ expressed at normal levels and by ZipA-GFP. The results suggest that the lack of PE may affect the correct interaction of FtsZ with membrane nucleation sites and alter FtsZ ring structure so as to prevent or delay its constriction.

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09105034 97322348
Interaction of protein kinase C zeta with ZIP, a novel protein kinase C-binding protein.

Puls A, Schmidt S, Gräwe F, Stabel S
Max-Delbrück-Laboratorium in der Max-Planck-Gesellschaft, Carl-von-Linné-Weg 10, D-50829 Cologne, Germany. Languages: ENGLISH Document type: JOURNAL ARTICLE

Proc Natl Acad Sci U S A (UNITED STATES) Jun 10 1997, 94 (12) p6191-6, ISSN 0027-8424 Journal Code: PV3
The atypical protein kinase C (PKC) member PKC-zeta has been implicated in several signal transduction pathways regulating differentiation, proliferation or apoptosis of mammalian cells. We report here the identification of a cytoplasmic and membrane-associated protein that we name zeta-interacting protein (ZIP) and that interacts with the regulatory domain of PKC-zeta but not classic PKCs. The structural motifs in ZIP include a recently defined ZZ zinc finger as a potential protein binding

module, two PEST sequences and a novel putative protein binding motif with the consensus sequence YYDDEYYSSDEED. ZIP binds to the pseudosubstrate region in the regulatory domain of PKC-zeta and is phosphorylated by PKC-zeta in vitro. ZIP dimerizes via the same region that promotes binding to PKC-zeta suggesting a competitive situation between ZIP-ZIP and ZIP:PKC-zeta complexes. In the absence of PKC-zeta proper subcellular localization of ZIP is impaired and we show that intracellular targeting of ZIP is dependent on a balanced interaction with PKC-zeta. Taking into account the recent isolation of ZIP by others in different contexts we propose that ZIP may function as a scaffold protein linking PKC-zeta to protein tyrosine kinases and cytokine receptors.

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08937389 97160838

Direct binding of FtsZ to ZipA, an essential component of the septal ring structure that mediates cell division in *E. coli*.

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Department of Molecular Biology and Microbiology, Case Western Reserve University School of Medicine, Cleveland, Ohio 44106-4960, USA.

Cell (UNITED STATES) Jan 24 1997, 88 (2) p175-85 ISSN 0092-8674, Journal Code: CQ4 Languages: ENGLISH Document type: JOURNAL ARTICLE

FtsZ is a soluble, tubulin-like GTPase that forms a membrane-associated ring at the division site of bacterial cells. While this ring is thought to drive cell constriction, it is not well understood how it is assembled or how it affects cell wall invagination. Here we report that FtsZ binds directly to a novel integral inner membrane protein in *E. coli* that we call ZipA. We present genetic and morphological evidence indicating that this interaction is required for cell division, and show that a fluorescent ZipA-GFP fusion protein is located in a ring structure at the division site, both before and during cell wall invagination. ZipA is an essential component of the division machinery, and, by binding to both FtsZ and the cytoplasmic membrane, is likely to be directly involved in the assembly and/or function of the FtsZ ring.

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08937388 97160837

Phosphorylation of residue 131 of HIV-1 matrix is not required for macrophage infection.

Fried EO; Englund G; Maldarelli F; Martin MA

Laboratory of Molecular Microbiology, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD 20892-0460, USA.

Cell (UNITED STATES) Jan 24 1997, 88 (2) p171-3, discussion 173-4, ISSN 0092-8674, Journal Code: CQ4 Languages: ENGLISH Document type: JOURNAL ARTICLE

1618 0720286 93069402 Cutaneous leishmaniasis in western Venezuela caused by infection with *Leishmania venezuelensis* and *L. brasiliensis* variants. Mar-Apr 1992

29jun99 09:15:38 User208600 Session D1221.3

File 5:BIOSIS Previews(R) 1969-1999Jun W3 (c) 1999 BIOSIS

S1 7 ZIPA OR ZIP(W)A

1/6/1 118959507 BIOSIS NO.: 199900145616

Localization of FtsA to the *Escherichia coli* septal ring. 1999

1/6/2 11850708 BIOSIS NO.: 199900096817

Septal localization of FtsQ, an essential cell division protein in *Escherichia coli*. 1999

1/6/3 11850071 BIOSIS NO.: 199900096180

Recruitment of ZipA to the septal ring of *Escherichia coli* is dependent on FtsZ and independent of FtsA. 1999

1/6/4 11647103 BIOSIS NO.: 199800426834

Localization and function of early cell division proteins in *Escherichia coli* cells lacking phosphatidylethanolamine. 1998

1/6/5 11549424 BIOSIS NO.: 199800330756

Localization of FtsZ, FtsA and ZipA division proteins in filamentous *Escherichia coli* cells lacking phosphatidylethanolamine. 1998

1/6/6 10989434 BIOSIS NO.: 199799404119

Interaction of protein kinase C zeta with ZIP, a novel protein kinase C-binding protein. 1997

1/6/7 10783974 BIOSIS NO.: 199799404119

Direct binding of FtsZ to ZipA, an essential component of the septal ring structure that mediates cell division in *E. coli*. 1997

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FILE COVERS 1967 - 29 Jun 1999 VOL 131 ISS 1
FILE LAST UPDATED: 29 Jun 1999 (19990629)ED
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12 ZIPA OR ZIP (W)A

L1 ANSWER 1 OF 12 CAPLUS COPYRIGHT 1999 ACS

T1 ***ZipA*** is a MAP-Tau homolog and is essential for structural integrity of the cytokinetic FtsZ ring during bacterial cell division

L1 ANSWER 2 OF 12 CAPLUS COPYRIGHT 1999 ACS

T1 Recruitment of ***ZipA*** to the division site by interaction with FtsZ

- L1 ANSWER 3 OF 12 CAPLUS COPYRIGHT 1999 ACS
 TI Localization of FtsZ to the *Escherichia coli* septal ring

L1 ANSWER 4 OF 12 CAPLUS COPYRIGHT 1999 ACS
 TI Septal localization of FtsQ, an essential cell division protein in *Escherichia coli*

L1 ANSWER 5 OF 12 CAPLUS COPYRIGHT 1999 ACS
 TI Localization and function of early cell division proteins in filamentous *Escherichia coli* cells lacking phosphatidylethanolamine

L1 ANSWER 7 OF 12 CAPLUS COPYRIGHT 1999 ACS
 TI Recruitment of ***ZipA*** to the septal ring of *Escherichia coli* is dependent on FtsZ and independent of FtsA

L1 ANSWER 8 OF 12 CAPLUS COPYRIGHT 1999 ACS
 TI Molecular biology of cation transport in plants

L1 ANSWER 9 OF 12 CAPLUS COPYRIGHT 1999 ACS
 TI Interaction of protein kinase C ζ with ***ZipA***, ***g*** novel protein kinase C-binding protein

L1 ANSWER 10 OF 12 CAPLUS COPYRIGHT 1999 ACS
 TI Direct binding of FtsZ to ***ZipA***, an essential component of the septal ring structure that mediates cell division in *E. coli*

L1 ANSWER 11 OF 12 CAPLUS COPYRIGHT 1999 ACS
 TI Cyclic adenosine 3',5'-monophosphate response element binding protein (CREB) and related transcription-activating deoxyribonucleic acid-binding proteins

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 TI A method for the preparation of multicolor presentation slides

L1 ANSWER 1 OF 12 CAPLUS COPYRIGHT 1999 ACS AN 1999336208 CAPLUS
 TI ***ZipA*** is a MAP-Tau homolog and is essential for structural integrity of the cytokinetic FtsZ ring during bacterial cell division

AU RayChaudhuri, Debabrata
 CS Department of Molecular Biology and Microbiology, Tufts University School of Medicine, Boston, MA, 02111, USA
 SO EMBO J. (1999), 18(9), 2372-2383 CODEN: EMODDG; ISSN: 0261-4189 PB Oxford University Press DT Journal LA English
 AB The first visible event in prokaryotic cell division is the assembly of the sol., tubulin-like FtsZ GTPase into a membrane-assoc. cytokinetic ring that defines the division plane in bacterial and archaeal cells. In the temp.-sensitive ftsZ84 mutant of *Escherichia coli*, this ring assembly is impaired at the restrictive temp. causing lethal cell filamentation. Here I present genetic and morphol. evidence that a 2-fold higher dosage of the division gene ***zipA*** suppresses thermostability of the ftsZ84 mutant by stabilizing the latent FtsZ84 ring structure *in vivo*. I demonstrate that purified ***ZipA*** promotes and stabilizes protofilament assembly of both FtsZ and FtsZ84 *in vitro* and cosediments with the protofilaments. Furthermore, ***ZipA*** organizes FtsZ protofilaments into arrays of long bundles or sheets that probably represent the physiol. organization of the FtsZ ring in bacterial cells. The N-terminal cytoplasmic domain of membrane-anchored ***ZipA*** contains sequence elements that resemble the microtubule-binding signature motifs in eukaryotic Tau, MAP2 and MAP4 proteins. It is postulated that the MAP-Tau-homologous motifs in ***ZipA*** mediate its binding to FtsZ, and that FtsZ- ***ZipA*** interaction represents an ancient prototype of the protein-protein interaction that enables MAPs to suppress microtubule catastrophe and/or to promote rescue.

L1 ANSWER 8 OF 12 CAPLUS COPYRIGHT 1999 ACS AN 1997776281 CAPLUS DN 12839179
 TI Screening antimicrobials in a cell-free ***ZipA*** protein-FtsZ protein binding system

IN De Boer, Piet A. J.; Hale, Cynthia A.
 PA Case Western Reserve University, USA
 SO PCT Int. Appl., 54 pp. CODEN: PIXDD2 DT Patent LA English
 FAN, GNT 1, PATENT NO. KIND DATE APPLICATION NO. DATE
 PI WO 9744481 A1 19971127 WO 97-JUS8703 19970521 W: AU CA, JP RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE CA 2254853 AA 19971127 CA 97-2254853 19970521 AU 9730760
 19971209 AU 97-30760 19970521 EP 912758 A1 19990506 EP 97-925694 19970521 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE, MC, PT, IE, FI
 PRA1 US 96-651818 19960521 WO 97-JUS8703 19970521

AB A method for screening compds. for antimicrobial activity is described that utilizes bacterial protein-protein binding *in vitro*. Thus, ***ZipA*** protein was identified that interacts with the cell division protein FtsZ. The ***ZipA*** protein was isolated by expression cloning from a lambda gt11 library of *Escherichia coli*. ***ZipA*** is an attractive basis for antimicrobial compd. screens for several reasons: (1) ***ZipA*** is essential; (2) ***ZipA*** binds to FtsZ even when either of the 2 proteins is partially denatured; (3) sol. fragments and derivs. of ***ZipA*** retain the ability to bind FtsZ. (4) HFTK- ***ZipA*** will bind to native FtsZ as well as immobilized FtsZ, and (5) labeled derivs. of ***ZipA*** in which a portion of the protein is fused to green fluorescent protein from *Aequorea victoria* retain the ability to bind FtsZ. The method may be performed using immobilized elements and the immobilization may be carried out using a variety of immobilization means e.g., columns, beads, adsorbs, nitrocellulose paper, etc.) in order to screen large libraries of compds.

L1 ANSWER 9 OF 12 CAPLUS COPYRIGHT 1999 ACS AN 1997339473 CAPLUS DN 127:118880
 TI Interaction of protein kinase C ζ with ***ZipA***, ***g*** novel protein kinase C-binding protein

AU Puls, Axel; Schmidt, Sandra; Gräwe, Ferdi; Stabel, Silvia
 CS Max-Debrück-Laboratorium, Max-Planck-Gesellschaft, Cologne, D-50829, Germany
 SO Proc. Natl. Acad. Sci. U. S. A. (1997), 94(12), 6191-6196 CODEN: PNASAB; ISSN: 0027-8424 PB National Academy of Sciences DT Journal LA English
 AB The atypical protein kinase C (PKC) member PKC- ζ has been implicated in several signal transduction pathways regulating differentiation, proliferation or apoptosis of mammalian cells. We report here the identification of a cytoplasmic and membrane-assoc. protein that we name ζ -interacting protein (ZIP) and that interacts with the regulatory domain of PKC- ζ , but not classic PKCs. The structural motifs in ZIP include a recently defined ZZ zinc finger as a potential protein binding module, two PEST sequences and a novel putative protein binding motif with the consensus sequence YXDEDX5SDE/D. ZIP binds to the pseudosubstrate region in the regulatory domain of PKC- ζ , and is phosphorylated by PKC- ζ in vitro. ZIP dimerizes via the same region that promotes binding to PKC- ζ , suggesting a competitive situation between ZIP-ZIP and ZIP-PKC- ζ complexes. In the absence of PKC- ζ , proper subcellular localization of ZIP is impaired and we show that

intracellular targeting of ZIP is dependent on a balanced interaction with PKC-*zeta*.. Taking into account the recent isolation of ZIP by others in different contexts we propose that ZIP may function as a scaffold protein linking PKC-*zeta* to protein tyrosine kinases and cytokine receptors.

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L1 7 ZIP OR ZIP(W)A

2. 5,571,860, Nov. 5, 1996, High performance PVdOH stabilized EVA adhesives; Pravin K. Kukkala, et al., 524/503, 271, 292, 297, 386, 387, 388 427, 446, 447, 449, 459; 526/202 [IMAGE AVAILABLE]

4. 4,939,438, Jul. 3, 1990, Relay control assembly; Richard J. Banzlaff, et al., 318/564, 434, 471; 361/28, 31 [IMAGE AVAILABLE]
 5. 4,918,840, Apr. 24, 1990, Footwear fastener; Elisa Nardulli, 361/50, 1, 51, 52 [IMAGE AVAILABLE]
 6. 4,911,960, Mar. 27, 1990, Laminating adhesive for film/paper microwavable products; Paul R. Mudge, et al., 420/34.3, 383/123, 426/111, 113, 234; 428/475.2, 481, 514, 516, 518; 524/502, 808 [IMAGE AVAILABLE]
 7. 3,891,305, Jun. 24, 1975, Apparatus for simulating a three-dimensional image by use of plural image producing surfaces; Lester Fader, 359/478 [IMAGE AVAILABLE]

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| E10 | E10 | 1 | CR=BYRNE C, 1990, V87, P2493, J ACOUST SOC AM | S9 | 12 S3 AND S8 |
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| E5 | 7 | CR=BRYNE C, 1988, V16, P224, NUCLEIC ACIDS RES | S3 | 93 | S1 OR S2 |
| E6 | 18 | CR=BRYNE C, 1988, V16, P9342, NUCLEIC ACIDS RES | S4 | 554096 | BLND? |
| E7 | 5 | CR=BRYNE C, 1988, V16, P9342, NUCLEIC ACIDS RES | S5 | 37 | S3 AND S4 |
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| E9 | 3 | CR=BRYNE C, 1989, V12, P81, B ENVIRON CONTAM TOX | S7 | 1 | S3 AND S6 |
| E10 | 1 | CR=BRYNE C, 1990, V87, P293, J ACOUST SOC AM | S8 | 412793 | INTEGRAL OR MEMBRANE |
| E11 | 1 | CR=BRYNE C, 1991, A17, MINNEAPOLIS STA 0728 | S9 | 12 | S3 AND S8 |
| E12 | 1 | CR=BRYNE C, 1991, IN PRESS J ACoust SO | S10 | 19096 | SEPTA? |
| Ref | Items | Index-term | S11 | 1 | S3 AND S10 |
| E1 | 0 | *CR=BRYNE CR, 1988 | S12 | 131663 | SCREEN? |
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| E4 | 1 | CR=BRYNE CR, 1989, V168, P3150, J BACTERIOL | | | |

Title: Trypsin cleavage of human cystathione β -synthetase into an evolutionarily conserved active core: Structural and functional consequences (ABSTRACT AVAILABLE) Publication date: 19980715

5/6/3 (Item 3 from file: 34) 05534498 Genuine Article#: WER70 Number of References: 46
Title: Direct binding of FtsZ to ZipA, an essential component of the septal ring structure that mediates cell division in E-coli (ABSTRACT AVAILABLE) Publication date: 19970124

5/6/4 (Item 4 from file: 34) 05281618 Genuine Article#: VM555 Number of References: 36
Title: A CHANGE IN THE INTERNAL ALDIMINE LYSINE (K-42) IN O-ACETYL SERINE SULPHYDRYLASE TO ALANINE INDICATES ITS IMPORTANCE IN TRANSMISSION AND AS A GENERAL BASE CATALYST (Abstract Available)

5/6/5 (Item 5 from file: 34) 05252946 Genuine Article#: VI327 Number of References: 38
Title: REGULATION OF SULFATE ASSIMILATION IN SACCHAROMYCES CEREVISIAE (Abstract Available)

5/6/6 (Item 6 from file: 34) 04966407 Genuine Article#: UW352 Number of References: 82
Title: STUDIES ON THE SYNTHESIS OF THE FE-S CLUSTER OF DIHYDROXY-ACID DEHYDRATASE IN ESCHERICHIA-COLI CRUDE EXTRACT - ISOLATION OF O-ACETYL SERINE SULPHYDRYLASE-A AND SULPHYDRYLASE-B AND BETA-CYSTATHIONASE BASED ON THEIR ABILITY TO MOBILIZE SULFUR FROM CYSTEINE AND TO PARTICIPATE IN FE-S CLUSTER SYNTHESIS (Abstract Available)

5/6/7 (Item 7 from file: 34) 04942678 Genuine Article#: UU195 Number of References: 25
Title: TRYPTOPHAN LUMINESCENCE AS A PROBE OF ENZYME CONFORMATION ALONG THE O-ACETYL SERINE SULPHYDRYLASE REACTION PATHWAY (Abstract Available)

5/6/8 (Item 8 from file: 34) 04872512 Genuine Article#: JN501 Number of References: 23
Title: KINETICS AND MECHANISM OF MUTANT O-ACETYL SERINE SULPHYDRYLASE-A (CA3S) FROM SALMONELLA-TYPHIMURIUM LT-2 (Abstract Available)

5/6/9 (Item 9 from file: 34) 04687314 Genuine Article#: UB371 Number of References: 24
Title: ISOLATION OF A GENE ENCODING CYSTEINE SULPHYDRYLASE FROM FLAVOBACTERIUM K-3-15 (Abstract Available)

5/6/10 (Item 10 from file: 34) 04608018 Genuine Article#: TW740 Number of References: 49
Title: SPINACH CHLOROPLAST O-ACETYL SERINE (THIOL)-LYASE EXHIBITS 2 CATALYTICALLY NONEQUIVALENT PYRIDOXAL-5'-PHOSPHATE-CONTAINING ACTIVE-SITES (Abstract Available)

5/6/11 (Item 11 from file: 34) 04560247 Genuine Article#: TT476 Number of References: 16
Title: SPECTRAL STUDIES OF CONFORMATIONAL CHANGE AT THE ACTIVE-SITE OF MUTANT O-ACETYL SERINE SULPHYDRYLASE-A (CA3S) (Abstract Available)

5/6/12 (Item 12 from file: 34) 04350880 Genuine Article#: RX235 Number of References: 27
Title: ACID-BASE CHEMICAL MECHANISM OF O-ACETYL SERINE SULPHYDRYLASE-A AND SULPHYDRYLASE-B FROM PH STUDIES (Abstract Available)

5/6/13 (Item 13 from file: 34) 04350861 Genuine Article#: RX235 Number of References: 31
Title: IDENTIFICATION AND SPECTRAL CHARACTERIZATION OF THE EXTERNAL ALDIMINE OF THE O-ACETYL SERINE SULPHYDRYLASE REACTION (Abstract Available)

5/6/14 (Item 14 from file: 34) 03835980 Genuine Article#: QK084 Number of References: 123
Title: NOVEL PROTEINS OF THE PHOSPHOTRANSFERASE SYSTEM ENCODED WITHIN THE RPON OPERON OF ESCHERICHIA-COLI - ENZYME II_{A(NTR)} AFFECTS GROWTH ON ORGANIC NITROGEN AND THE CONDITIONAL LETHALITY OF AN ERA(TS) MUTANT (Abstract Available)

5/6/15 (Item 15 from file: 34) 03810417 Genuine Article#: OH590 Number of References: 49
Title: LOCATION OF THE CATALYTIC SITE FOR PHOSPHODENPOLYPYRUVATE FORMATION WITHIN THE PRIMARY STRUCTURE OF CLOSTRIDIUM-SYMBIOSUM PYRUVATE PHOSPHATE DIKINASE. 2. SITE-DIRECTED MUTAGENESIS OF AN ESSENTIAL ARGININE CONTAINED WITHIN AN APPARENT P-LOOP (Abstract Available)

5/6/16 (Item 16 from file: 34) 03784889 Genuine Article#: QF535 Number of References: 37
Title: EFFECT OF THE FRUR REGULATOR ON TRANSCRIPTION OF THE PTS OPERON IN ESCHERICHIA-COLI (Abstract Available)

5/6/17 (Item 17 from file: 34) 03562448 Genuine Article#: PN138 Number of References: 31
Title: CHARACTERIZATION OF A CYSTATHIONINE BETA-SYNTHASE ALLELE WITH 3 MUTATIONS IN CIS IN A PATIENT WITH B-6 NONRESPONSIVE HOMOCYSTINURIA. (Abstract Available)

5/6/18 (Item 18 from file: 34) 03431478 Genuine Article#: PE694 Number of References: 45
Title: RESIDUE THREONINE-149 OF THE SALMONELLA-TYPHIMURIUM CYSB TRANSCRIPTION ACTIVATOR - MUTATIONS CAUSING CONSTITUTIVE EXPRESSION OF POSITIVELY REGULATED GENES OF THE CYSTEINE REGULON (Abstract Available)

5/6/19 (Item 19 from file: 34) 03252520 Genuine Article#: NQ764 Number of References: 65
Title: STOICHIOMETRY OF BINDING OF CYSB TO THE CYSHH CYSK, AND CYSP PROMOTER REGIONS OF SALMONELLA-TYPHIMURIUM (Abstract Available)

5/6/20 (Item 20 from file: 34) 03089286 Genuine Article#: NC497 Number of References: 32
Title: PURIFICATION AND PROPERTIES OF SACCHAROMYCES CEREVISIAE CYSTATHIONINE BETA-SYNTHASE (Abstract Available)

5/6/21 (Item 21 from file: 34) 02995679 Genuine Article#: MY842 Number of References: 49
Title: STOICHIOMETRY OF BINDING TO THE ALPHA-CARBOXYL SUBSITE IN A CONFORMATIONAL CHANGE AT THE ACTIVE-SITE OF O-ACETYL SERINE SULPHYDRYLASE-A - EVIDENCE FROM FLUORESCENCE SPECTROSCOPY (Abstract Available)

5/6/22 (Item 22 from file: 34) 02807343 Genuine Article#: ME987 Number of References: 46
Title: TOBACCO PLANTS TRANSFORMED WITH THE O-ACETYL SERINE (THIOL) LYASE GENE OF WHEAT ARE RESISTANT TO TOXIC LEVELS OF HYDROGEN-SULFIDE GAS (Abstract Available)

5/6/23 (Item 23 from file: 34) 02679909 Genuine Article#: LW441 Number of References: 553
Title: PHOSPHOENOLPYRUVATE - CARBOHYDRATE PHOSPHOTRANSFERASE SYSTEMS OF BACTERIA (Abstract Available)

5/6/24 (Item 24 from file: 34) 02639667 Genuine Article#: LR868 Number of References: 31
Title: COMMON SEQUENCE MOTIFS CODING FOR HIGHER-PLANT AND PROKARYOTIC O-ACETYL SERINE (THIOL)-LYASES - BACTERIAL ORIGIN OF A CHLOROPLAST TRANSIT PEPTIDE (Abstract Available)

5/6/25 (Item 25 from file: 34) 02584179 Genuine Article#: LN618 Number of References: 20 Title: KINETIC MECHANISMS OF THE A-ISOZYME AND B-ISOZYME OF N-AcETYL-SERINE SULPHYDRYLASE FROM SALMONELLA-TYPHIMURUM LT-2 USING THE NATURAL AND ALTERNATIVE REACTANTS (Abstract Available)

5/6/26 (Item 26 from file: 34) 02380999 Genuine Article#: KX756 Number of References: 216 Title: COMPILATION OF *ESCHERICHIA-COLI* MESSENGER-RNA PROMOTER SEQUENCES (Abstract Available)

5/6/27 (Item 27 from file: 34) 02278743 Genuine Article#: KQ123 Number of References: 41 Title: INTRODUCTION AND EXPRESSION OF THE BACTERIAL GENES CYSE AND CYSK IN EUKARYOTIC CELLS (Abstract Available)

5/6/28 (Item 28 from file: 34) 02180330 Genuine Article#: KG984 Number of References: 46 Title: O-AcETYL-SERINE(THIO)UPLASE FROM SPINACH (SPINACIA-OLERACEA L) (LEAF - CONA CLONING, CHARACTERIZATION, AND OVEREXPRESSION IN *ESCHERICHIA-COLI* OF THE CHLOROPLAST ISOFORM (Abstract Available)

5/6/29 (Item 29 from file: 34) 02105920 Genuine Article#: KX098 Number of References: 46 Title: THE MOLECULAR BASIS FOR POSITIVE REGULATION OF CY'S PROMOTERS IN SALMONELLA-TYPHIMURUM AND *ESCHERICHIA-COLI* (Abstract Available)

5/6/31 (Item 31 from file: 34) 01875633 Genuine Article#: JH1989 Number of References: 46 Title: POSITIVE REGULATION OF THE EXPRESSION OF THE *ESCHERICHIA-COLI* PTS OPERON - IDENTIFICATION OF THE REGULATORY REGIONS

5/6/32 (Item 32 from file: 34) 01736581 Genuine Article#: HX169 Number of References: 28 Title: RAT CYSTATHIONINE BETA-SYNTHASE GENE ORGANIZATION AND ALTERNATIVE SPlicing (Abstract Available)

5/6/33 (Item 33 from file: 34) 01734118 Genuine Article#: HW518 Number of References: 200 Title: OPEN QUESTIONS ABOUT SULFUR METABOLISM IN PLANTS

5/6/34 (Item 34 from file: 34) 01217747 Genuine Article#: GF98 Number of References: 53 Title: THE CYSP PROMOTER OF SALMONELLA-TYPHIMURUM - CHARACTERIZATION OF 2 BINDING-SITES FOR CYSB PROTEIN, STUDIES OF INNVO TRANSCRIPTION INITIATION, AND DEMONSTRATION OF THE ANTI-INDUCER EFFECTS OF THIOSULFATE (Abstract Available)

5/6/35 (Item 35 from file: 34) 00744123 Genuine Article#: ET446 Number of References: 37 Title: POSITIVE REGULATION OF THE PTS OPERON OF *ESCHERICHIA-COLI* - GENETIC-EVIDENCE FOR A SIGNAL TRANSDUCTION MECHANISM (Abstract Available)

5/6/36 (Item 36 from file: 34) 00317754 Genuine Article#: DG186 Number of References: 48 Title: SULFATE AND THIOSULFATE TRANSPORT IN *ESCHERICHIA-COLI* K-12 - IDENTIFICATION OF A GENE ENCODING A NOVEL PROTEIN INVOLVED IN THIOSULFATE BINDING

5/6/37 (Item 1 from file: 434) 09228577 Genuine Article#: RG313 Number of References: 46 Title: MOLECULAR CHARACTERIZATION OF THE CYSHH PROMOTERS OF SALMONELLA-TYPHIMURUM AND *ESCHERICHIA-COLI* - REGULATION BY CYSB PROTEIN AND N-AcETYL-L-SERINE

5/7/3 (Item 3 from file: 34) DIALOG(R)File 34:SciSearch(R) Cited Ref Sci (c) 1999 Inst for Sci Info. All rts. reserv.

05534498 Genuine Article#: WE970 Number of References: 46 Title: Direct binding of FtsZ to ZipA, an essential component of the septal ring structure that mediates cell division in *E-coli*

Author(s): Hale CA (REPRINT); deBoer PAJ Corporate Source: CASE WESTERN RESERVE UNIV SCH MED, DEPT MOL BIOL & MICROBIOL, 10900 EUCLID AVE(CLEVELAND)(OH)44106 (REPRINT)

Journal: CELL, 1997, V68, N2 (JAN 24), P175-185 ISSN: 0092-8674 Publication date: 19970124 Publisher: CELL PRESS, 1050 MASSACHUSETTES AVE, CIRCULATION DEPT, CAMBRIDGE, MA 02138

Language: English Document Type: ARTICLE Abstract: FtsZ is a soluble, tubulin-like GTPase that forms a membrane-associated ring at the division site of bacterial cells. While this ring is thought to drive cell constriction, it is not well understood how it is assembled or how it affects cell wall invagination. Here we report that FtsZ binds directly to a novel integral inter-membrane protein in *E. coli* that we call ZipA. We present genetic and morphological evidence indicating that this interaction is required for cell division, and show that a fluorescent ZipA-GFP fusion protein is located in a ring structure at the division site, both before and during cell wall invagination. ZipA is an essential component of the division machinery, and, by binding to both FtsZ and the cytoplasmic membrane, is likely to be directly involved in the assembly and/or function of the FtsZ ring.

5/7/27 (Item 27 from file: 34) DIALOG(R)File 34:SciSearch(R) Cited Ref Sci (c) 1999 Inst for Sci Info. All rts. reserv.

02278743 Genuine Article#: KQ123 Number of References: 41 Title: INTRODUCTION AND EXPRESSION OF THE BACTERIAL GENES CYSE AND CYSK IN EUKARYOTIC CELLS

Corporate Source: CSIRO, DIV ANIM PROD, POB 239/BLACKTOWN/NSW 2148/AUSTRALIA/ Journal: APPLIED AND ENVIRONMENTAL MICROBIOLOGY, 1993, V59, N3 (MAR), P 892-898 ISSN: 0099-2240 Language: ENGLISH Document Type: ARTICLE Abstract: The coding sequences of the *cysE* and *cysK* genes from *Escherichia coli*, which encode the enzymes of the cysteine biosynthetic pathway, namely, serine acetyltransferase (EC 2.3.1.30) and O-acetylserine sulphydrylase (or cysteine synthase [EC 4.2.99.81]), were modified for expression in eukaryotic cells and introduced into murine L cells. A number of fusion genes comprising the *cysE* or *cysK* coding sequences joined to the promoter of the ovine metallothionein-1a (MT-1a) gene and various portions of the ovine growth hormone (GH) gene were prepared. Significant differences in the expression of the fusion genes were observed, depending on the amount and arrangement of the GH gene sequences used, the highest levels being obtained with the constructs MTCE10 and MTCK7, which contained only the GH 3' untranslated gene sequences. These two constructs were used to produce the gene MTCEK1. In this single DNA sequence, each bacterial gene is under independent MT-1a promoter control. Expression of the *cysK* sequence in this construct (MT-1a promoter-*cysE*-3' GH sequence-MT-1a promoter-*cysK*-3' GH sequence) was elevated compared with expression of the *cysE* sequence in MTCEK1. However, expression of the *cysE* sequence in MTCEK1 was only 40% of that of the *cysE* gene cloned into MTCE10. The double-promoter configuration, which enhances the expression of the second gene in MTCEK1, is proposed as a model for the modification of bacterial genes in general.

9/6/1 (Item 1 from file: 34) 07047720 Genuine Article#: 117LH Number of References: 5045 Title: Linkage map of *Escherichia coli* K-12, edition 10: The traditional map (ABSTRACT AVAILABLE) Publication date: 19980900

9/6/2 (Item 2 from file: 34) 059561518 Genuine Article#: 10852 Number of References: 31
Title: Cysteine 42 is important for maintaining an integral active site for O-Acetylserine sulfhydrylase resulting in the stabilization of the alpha-aminobutyrate intermediate (ABSTRACT AVAILABLE) Publication date: 19980728

9/6/3 (Item 3 from file: 34) 05534498 Genuine Article#: W/970 Number of References: 46
Title: Direct binding of FtsZ to ZipA, an essential component of the septal ring structure that mediates cell division in *E. coli* (ABSTRACT AVAILABLE) Publication date: 19970124

9/6/4 (Item 4 from file: 34) 05207055 Genuine Article#: W/1236 Number of References: 57
Title: SIDEROPORE-MEDIATED IRON UPTAKE IN *ALCALIGENES-EUTROPHUS* CH34 AND IDENTIFICATION OF ALEB ENCODING THE FERRIC IRON-ALCALIGENE RECEPTOR (Abstract Available)

9/6/5 (Item 5 from file: 34) 04608018 Genuine Article#: TW740 Number of References: 49
Title: SPINACH CHLOROPLAST O-ACETYL SERINE (THIO)-LYASE EXHIBITS 2 CATALYTICALLY NONEQUIVALENT PYRIDOXAL-5-PHOSPHATE-CONTAINING ACTIVE-SITES (Abstract Available)

9/6/6 (Item 6 from file: 34) 04038196 Genuine Article#: RB443 Number of References: 73
Title: GENETIC-MAP OF *SAFMONELLA-TYPHIMURIUM*, EDITION-VIII (Abstract Available)

9/6/7 (Item 7 from file: 34) 03947314 Genuine Article#: Q/413 Number of References: 75
Title: NOVEL PHOSPHOTRANSFERASE SYSTEM GENES REVEALED BY BACTERIAL GENOME ANALYSIS - A GENE-CLUSTER ENCODING A UNIQUE ENZYME-1 AND THE PROTEINS OF A FRUCTOSE-LIKE PERMEASE SYSTEM (Abstract Available)

9/6/8 (Item 8 from file: 34) 02959679 Genuine Article#: M/942 Number of References: 49
Title: PRODUCT BINDING TO THE ALPHA-CARBOXYL SUBSITE RESULTS IN A CONFORMATIONAL CHANGE AT THE ACTIVE-SITE OF O-ACETYL SERINE SULFHYDRYLASE-A - EVIDENCE FROM FLUORESCENCE SPECTROSCOPY (Abstract Available)

9/6/9 (Item 9 from file: 34) 02679909 Genuine Article#: L/441 Number of References: 553
Title: PHOSPHOENOLPYRUVATE - CARBOHYDRATE PHOSPHOTRANSFERASE SYSTEMS OF BACTERIA (Abstract Available)

9/6/10 (Item 10 from file: 34) 02380999 Genuine Article#: K/756 Number of References: 49
Title: COMPIILATION OF *ESCHERICHIA-COLI* MESSENGER-RNA PROMOTER SEQUENCES (Abstract Available)

9/6/11 (Item 11 from file: 34) 00317754 Genuine Article#: DC186 Number of References: 48
Title: SULFATE AND THIOSULFATE TRANSPORT IN *ESCHERICHIA-COLI*K-12 - IDENTIFICATION OF A GENE ENCODING A NOVEL PROTEIN INVOLVED IN THIOSULFATE BINDING

9/6/12 (Item 12 from file: 34) 00040158 Genuine Article#: CH190 Number of References: 19
Title: MUTATIONS IN THE BGLY GENE INCREASE THE FREQUENCY OF SPONTANEOUS DELETIONS IN *ESCHERICHIA-COLI*K-12

11/6/1 (Item 1 from file: 34) 05534498 Genuine Article#: W/970 Number of References: 46
Title: Direct binding of FtsZ to ZipA, an essential component of the septal ring structure that mediates cell division in *E. coli* (ABSTRACT AVAILABLE) Publication date: 19970124

13/7/1 (Item 1 from file: 34) DIALOG(R)File 34:SciSearch(R) Cited Ref Sci (c) 1998 Inst for Sci Info. All rts. reserv.

00940842 Genuine Article#: FH157 Number of References: 26
Title: STAPHYLOCOCCAL PHOSPHOENOLPYRUVATE-DEPENDENT PHOSPHOTRANSFERASE SYSTEM - PURIFICATION AND PROTEIN SEQUENCING OF THE STAPHYLOCOCCUS-CARNOSUS HISTIDINE-CONTAINING PROTEIN, AND

CLONING AND DNA SEQUENCING OF THE PTSH GENE
Author(s): EISERMANN R; FISCHER R; KESSLER U; NEUBAUER A; HENGSTENBERG W
Corporate Source: RUHR UNIV BOCHUM,DEPT MICROBIOL, NDEF 06D-4630 BOCHUM//FED REP GER/; RUHR UNIV BOCHUM,DEPT MICROBIOL, NDEF 06D-4630 BOCHUM//FED REP GER/

Journal: EUROPEAN JOURNAL OF BIOCHEMISTRY, 1991, V/97, N/1, P/9-14 Language: ENGLISH Document Type: ARTICLE

Abstract: The histidine-containing protein (HPr) of the bacterial phosphoenolpyruvate-dependent phosphotransferase system (PTS) was isolated from *Staphylococcus carnosus* and purified to homogeneity. The protein sequence was determined by Edman degradation of peptides obtained by proteolytic digestion with proteases V8, trypsin and chemical cleavage with BzCN. Furthermore, immunological screening of a chromosomal *S. carnosus* DNA gene library in pUC19 vector enabled us to isolate *S. carnosus* HPr-expressing colonies. The nucleotide sequence of this ptsH gene and its flanking regions was determined by the dideoxy-chain-termination technique. Upstream, the 264-bp open reading frame of the ptsH gene is flanked by a putative *S. carnosus* promoter structure and a putative ptsI gene downstream suggesting that ptsH gene is the first gene in the PTS operon of *S. carnosus*. Comparison of the amino acid sequence of *S. carnosus* HPr with the HPr sequence of *Staphylococcus aureus* (derived from peptide sequencing) showed a high degree of similarity.